

Occupational Health Nurses Practices in Providing Occupational Health Services for Health Workers

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Objective: This cross-sectional study aimed to examine the occupational health nurse practices in providing occupational health services for health workers and its related factors.

Materials and Methods: A cross-sectional survey was conducted with 320 occupational health nurses working in tertiary care hospitals with occupational medicine departments located in all regions of Thailand. Data were collected using the mailed questionnaires with a response rate of 65.9%. A total of 211 samples were analyzed.

Results: Findings indicated that occupational health nurse practice in providing services for health workers was mostly at a high level of performance (62.6%). Knowledge and skills in occupational health, number of nurses in the occupational medicine department, occupational health information management, and job responsibility were significantly associated with high performing practice related to occupational health services for health workers and these factors altogether could predict 28.6% of the variance in occupational health nurses practices in providing occupational health services for health workers ($p < 0.05$).

Conclusion: Findings suggest that knowledge and skills related to occupational health nursing should be developed through various means of continuing education. To enhance the practices in providing occupational health services for health workers, occupational health information management and job description should be developed. Staffing issues should also be addressed by the hospital administrators.

Keywords: Occupational health nurse, Occupational health services, Health workers, Health care settings

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Occupational health has an emphasis on the health of people who are at risk of work-related illnesses and injury. Initially, occupational health services in Thailand focused on workers in industrial settings. Recently, it has been expanded to the other working populations including those in healthcare settings. Thai hospital workers, like others worldwide, face a wide range of hazards on the job, including sharps injuries, infectious diseases due to biological hazards exposure, back injuries, violence, and stress⁽¹⁾.

In Thailand, occupational health services are mostly provided by governmental health sectors⁽²⁾. Occupational medicine departments were established in tertiary care hospitals in all country regions with missions to provide occupational health surveillance, medical diagnosis, treatment, health promotion and disease prevention for the workforce. Working with multidisciplinary team, the occupational health

nurse has a major role in providing occupational health services to reduce the number of people incurring work-related illness or injuries, health promotion, disease prevention and control, as well as rehabilitation according to the needs and problems of workers. The occupational health services by nurses in occupational medicine departments are provided not only in the work settings, but also in their own healthcare setting. Occupational health services for health workers is one of five major areas of the services, in addition to the occupational medicine clinic, health promotion, rehabilitation of workers, disease prevention and control, and environmental health.

To assure the effective performance of occupational health nurses, the standard of occupational health nursing according to the structure of the services of occupational medicine department was recently developed and disseminated⁽³⁾. However, issues of performance and factors affecting performance of occupational health nurses in providing occupational health services for health workers are not adequately addressed in Thailand. There is a need to seek evidence about occupational health services in healthcare settings and to develop strategies to improve the services provided for health workers.

Factors related to performance depend on both personal factors such as knowledge and skills, capacity and

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motives, and environmental factors including information management, resources and incentives⁽⁴⁾. The occupational health nurse practices in providing occupational health services for health workers and its related factors were examined in this study by using the Behavior Engineering Model⁴ as a conceptual framework. Findings from this study could be used to improve services related to occupational health in healthcare settings

Objectives

To study the practice of the occupational health nurses in providing occupational health services for health workers and its related factors.

Materials and Methods

This cross-sectional research was conducted with all nurses (n = 320) who worked in the occupational medicine department in 96 regional and general hospitals under the Office of the Permanent Secretary for Public Health. Data were collected by mailing the questionnaire to occupational health nurses in each hospital. A total of 211 questionnaires were returned, accounted for the response rate of 65.9 percent.

Instrument

The research instrument for the present study was a self-administered questionnaire, which consisted of general characteristics of participants including age, marital status, education, work experience, OHN training, work assignments, and job responsibility.

Practice of occupational health nurses in providing occupational health services for health workers was measured by asking the subjects to what extent they perform occupational health in health care settings (8 questions). The 5-point rating scale format was used with the responses ranged from high to none.

Factors related to the practices developed by the literature review based on the Behavior Engineering Model⁽⁴⁾ included knowledge and skill for occupational health nursing (10 questions), capacity for occupational health nursing (11 questions), motivation (8 questions), information management in occupational health (7 questions), resources on occupational health (7 questions), and work incentive (8 questions). These work-related factors were measured by the subject's perception in relation to a given statement. Likert's scale, with 5 level responses format ranging from strongly agree to strongly disagree, was used.

Content validity of questionnaires was examined by 3 qualified experts. The content validity index was 0.83. Before data collection, the questionnaire was pretested with 20 occupational health nurses with similar characteristics to studied subjects.

The reliability values of knowledge and skill for occupational health nursing, capacity for occupational health nursing, motivation, information management in occupational health, resources on occupational health, and work incentive were 0.923, 0.801, 0.714, 0.827, 0.845 and 0.897, respectively

Data collection

Data were collected after obtaining approval from the ethical review committee for in human research granted by Mahidol University (COA.NO.MUPH 2015-173). Before the data were collected, permission from the Ministry of Public Health to distribute questionnaires was obtained. After completion, questionnaires and letters of consent were sent back to the researcher in separate mailings. All the data were then verified and analyzed using statistical methods. Descriptive statistics and stepwise multiple regression analysis were used for data analysis. Statistical significance at 0.05 was tested.

Results

Most of the occupational health nurses were aged between 46 to 55 years old (62.1%) with the average age of 48.4 years and were married (67.3%). Most of the subjects had completed bachelor's degree (61.1%). A few had completed master's degree (3.8%). For occupational health nurse training, most of subjects were trained in a 60-hour OHN-training course (73.9%). Almost half of the nurses had occupational health nursing specialty training (4 months) (44.5%). Subjects have been practicing as an occupational health nurse for 5 to 10 years (38.9%) with a mean of 8 years.

Most of the subjects had occupational health nurse practices in providing occupational health services for health workers at high performance levels (62.6%). The highest level practices related to occupational health services for health workers reported as shown in Table 1 was conducting health risk assessment ($\bar{x} = 3.9 \pm 1.5$) and providing annual health check-up for hospital workers ($\bar{x} = 3.9 \pm 1.4$). The practice of occupational health nurses reported lowest was follow-up of hospital workers with work-related injury and illnesses ($\bar{x} = 3.1 \pm 1.4$).

Regarding factors related to occupational health nurse practices in providing occupational health services for health workers, stepwise multiple regression analysis (Table 2) demonstrated that knowledge and skills in occupational health nursing, number of nurses in the occupational medicine department, information management in occupational health, and job responsibility could altogether predict 28.6% of the occupational health nursing practice ($p < 0.5$).

Discussion

The study found that the occupational health nurses working in occupational medicine department had practices in providing occupational health services for health workers at a high performance level. This is probably due to a policy of hospital accreditation in which there is in part an emphasis on occupational health and safety of hospital staff. The tertiary care hospitals which are the work settings of the participants in this study need to be certified for Hospital Accreditation (HA)⁽⁵⁾ and Health Promoting Hospitals (HPH)⁽⁶⁾. In order to be certified, the hospital policy related to health risk assessment of hospital workers needs to be developed and an occupational health committee needs to

implement occupational health services for hospital workers. Therefore, occupational health nurses become a major force in driving the occupational health projects and activities in response to the hospital policy.

Occupational health nurses provide the majority of the care for working population through their occupational health knowledge and skills. It was found that the knowledge and skills in occupational health nursing were associated with the practice of occupational health nursing. Specialized training in the field of occupational health nursing covers the knowledge and skills essential to occupational health nursing practice, which consists primarily of industrial hygiene and safety, epidemiology, toxicology, work-related disease and illness and providing occupational health services⁽⁷⁾. Therefore, specialized training in the field of occupational health nursing is needed to promote good occupational health practices that are consistent with the law and ethics⁽⁸⁾ and also teach the specific skills needed for occupational health nurses to practice, namely technical skills related to occupational diseases, interpersonal skills, and intellectual skills⁽⁹⁾. Our study results were similar to those of a study in Namibia⁽¹⁰⁾, which found that knowledge and skills were positively affected in the practice of the nursing profession.

Information management in occupational health is used to indicate the quality of the organization, the direction of the organization, to assess how well the individual works, as well as to organize information data storage for assessment and improvement when necessary. The information systems must be sufficient, suitable for the distinctive work of occupational health nursing perspective, including organization information, personnel information, client information, environmental information and communication

record. This is consistent with the study of Nongharnpitak and Buaphun⁽¹¹⁾ which found that information management was related to the performance of nurse practitioners.

Knowledge and skills in occupational health nursing, information management in occupational health, job responsibility, and number of nurses in the occupational medicine department were the significant factors determining the level of the occupational health nursing practice. It can be concluded that occupational health nurses who have acquired the knowledge and skills in occupational health nursing and sufficient information management for occupational health to work with, working in adequate staffing unit and being assigned to have job responsibilities are able to perform much better the job duties of occupational health nursing.

Conclusion

The practice of the occupational health nurses in providing occupational health services for health workers was at high level. Knowledge and skills in occupational health nursing, number of nurses in the occupational medicine department, information management in occupational health, and job responsibility were factors related to the practice of occupational health nurses. Hospital administrators therefore should set the direction and clear goal of the occupational health services in the hospital setting, and then assign responsibilities corresponding to the structure, goal, and the knowledge and skills of occupational health nurses. Occupational medicine departments should be supported by sufficient information systems for occupational health services as needed. Knowledge and skills related to occupational health nursing should be developed through various means of staff development including continuing education and specialized

Table 1. Occupational health nurses practices in providing occupational health services for health workers

Occupational health nurses practices	\bar{X}	SD	Interpretation
Conducting health risk assessment	3.9	1.5	High
Providing annual health check-up for hospital workers	3.9	1.4	High
Update the health database of hospital workers	3.8	1.5	High
Working with the team to develop the occupational health projects based on the risk assessment	3.8	1.4	High
Health promotion services, behavioral modification, and occupational health and safety education	3.6	1.5	High
Project evaluation and report	3.6	1.4	High
Follow-up of hospital workers with work-related injury and illnesses	3.1	1.4	Moderate

Table 2. Factors associated to occupational health nurses practices in providing occupational health services for health workers

Variable	B	Beta	R ²	Adjusted R ²	t	Sig.
Knowledge and skills in occupational health	0.446	0.253	0.161	0.165	3.518	0.001
Number of nurses in occupational medicine department	0.565	0.215	0.223	0.230	3.523	0.001
Information management in occupational health	0.355	0.214	0.258	0.269	2.968	0.003
Job responsibility	0.484	0.185	0.286	0.301	2.967	0.003
Constant = 0.661, R ² = 0.286, t = 1.465, p = 0.014						

training. As this study was limited only to nurses working in tertiary care hospitals, occupational health nursing practice of nurses who work in the community hospitals in which scale and context of services are different should be explored in future studies.

What is already known on this topic?

Occupational health service for health workers is one of major areas of the services provided by nurses working in occupational medicine department. The standards of occupational health nursing are available to guide the nursing practices. There was no study examining the performance and factors affecting performance of occupational health nurses in providing occupational health services for health workers.

What this study adds?

This study revealed that occupational health service for health workers was high. Knowledge and skills in occupational health nursing, number of nurses in the occupational medicine department, information management in occupational health, and job responsibility were factors associated with occupational health nursing practices related to services provided. This information can be used to develop strategies to improve the services provided for health workers.

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Potential conflicts of interest

The authors declare no conflicts of interest.

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